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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,523	09/15/2003	Terukazu Kokubo	242596US0DIV	8019
22850	7590	05/20/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MAI, NGOCLAN THI	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,523

Applicant(s)

KOKUBO ET AL.

Examiner

Ngoclan T. Mai

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/961,323.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Kohut et al.

Kohut et al. discloses a low density high surface area copper powder having a BET surface area of at least $0.5 \text{ m}^2/\text{g}$, mean particle size in the range of 5 to 50 microns and purity of at least 99% by weight (col. 3, line 49 to col. 4, line 18). In one preferred embodiment Kohut et al discloses Cu with purity of at least 99.9 to at least 99.99% by weight. In Example 2 Kohut et al discloses copper powder having BET surface area of $0.60 \text{ m}^2/\text{g}$ and mean particle size of 26.77 microns. Kohut et al., in col. 5, lines 6-14, further teaches that the Cu powders are useful in making products having high conductivity applications, both thermal and electrical and in conductive paste application as well as an additives for conductive polymer compositions. Since the Cu powder taught has high purity, i.e., at least 99.9% to 99.99, any impurities such as carbon, sulfur, and oxygen, if present in Cu powders, would inherently be below the amount claimed by the applicants. Since the copper powders taught by Kohut et al include copper particles having the claimed BET surface area, particle size and purity, they would inherently have the claimed saturation magnetization.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohut et al in view of Sanohe et al. Kawasumi.

Kohut et al teaches the claimed conductive metal particles. Kohut et al however does not teach conductive composite metal particles where the surfaces of conductive metal particles are coated with a high-conductive metal.

Sanohe et al teaches an electroconductive film comprising copper powder that has been coated with silver. See col. 6, lines 9-10. Sanohe et al teaches that an electroconductive film which has copper powder covered with silver coating has a shielding effect superior to that of a film with bare copper powder. See col. 6, lines 9-29.

Kawasumi teaches that gold or silver coated copper or nickel powder is used in place of pure gold or silver because it is economical advantageous as compared to pure gold or silver.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat copper powder taught by Kohut et al with silver and/or gold taught by Sanohe et al and Kawasumi to be used in producing electroconductive film

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having superior shielding effect as compared to film with bare copper and economical advantageous as compared to pure gold or silver.

5. Claims 5 to 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohut et al in view of Sanohe et al. or Kawasumi as applied to claim 4 above, and further in view of Teichmann et al.

Kohut et al in view of Sanohe et al or Kawasumi does not teach the thickness of silver or gold coating on copper particles.

Teichmann et al teaches that silver coating on copper coated particle should have a maximum thickness of 15 percent of the maximum particle dimension and for particle of average size, the minimum thickness of silver coating should be about 300 angstrom (30 nm) to provide good corrosion resistance and reduce oxidation of the copper. Col. 4, lines 1-9. Teichmann et al also teach that gold or other precious metal coating may be substituted for the silver coating and that the thickness of the gold coating should be at least about 200 angstrom (20 nm). Col. 4, lines 10-19.


It would have been obvious to one of ordinary skill in the art to coat the conductive metal particles taught by Kohut in view of Sanohe et al or Kawasumi with a silver or gold with a coating thickness of at least 20 nm as taught by Teichmann et al to provide good corrosion resistance and reduce oxidation of the copper.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 7:30-4:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.